

FLOW SCHEMATIC FOR FIELD SUPPLIED DATA ENTRY AND BASE STATION  
OR SERVICE PROVIDER SUPPLIED COMPUTER ASSISTANCE

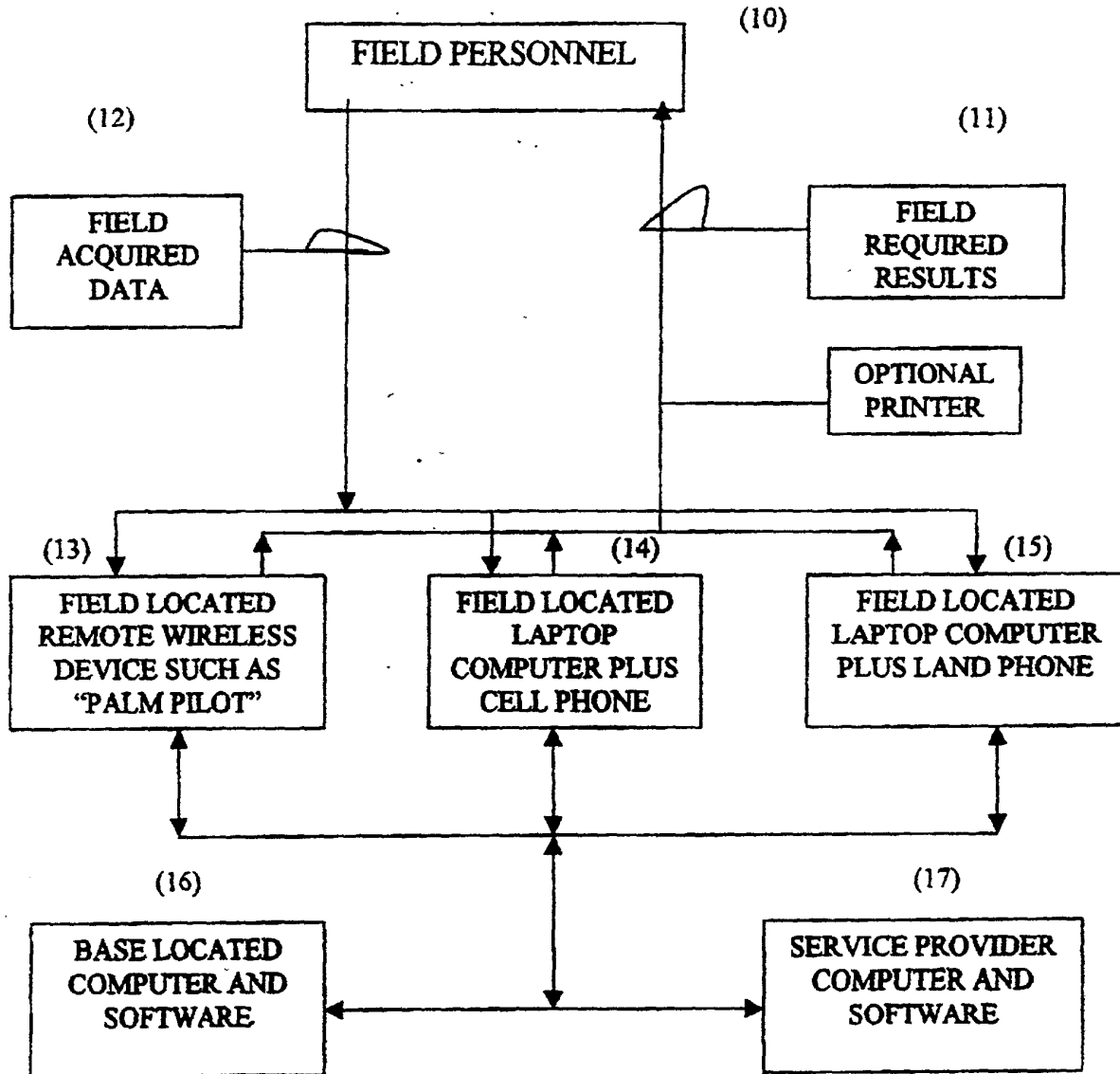


FIG. 1

ET 1822 3695841  
2822

PROGRAMS (18)

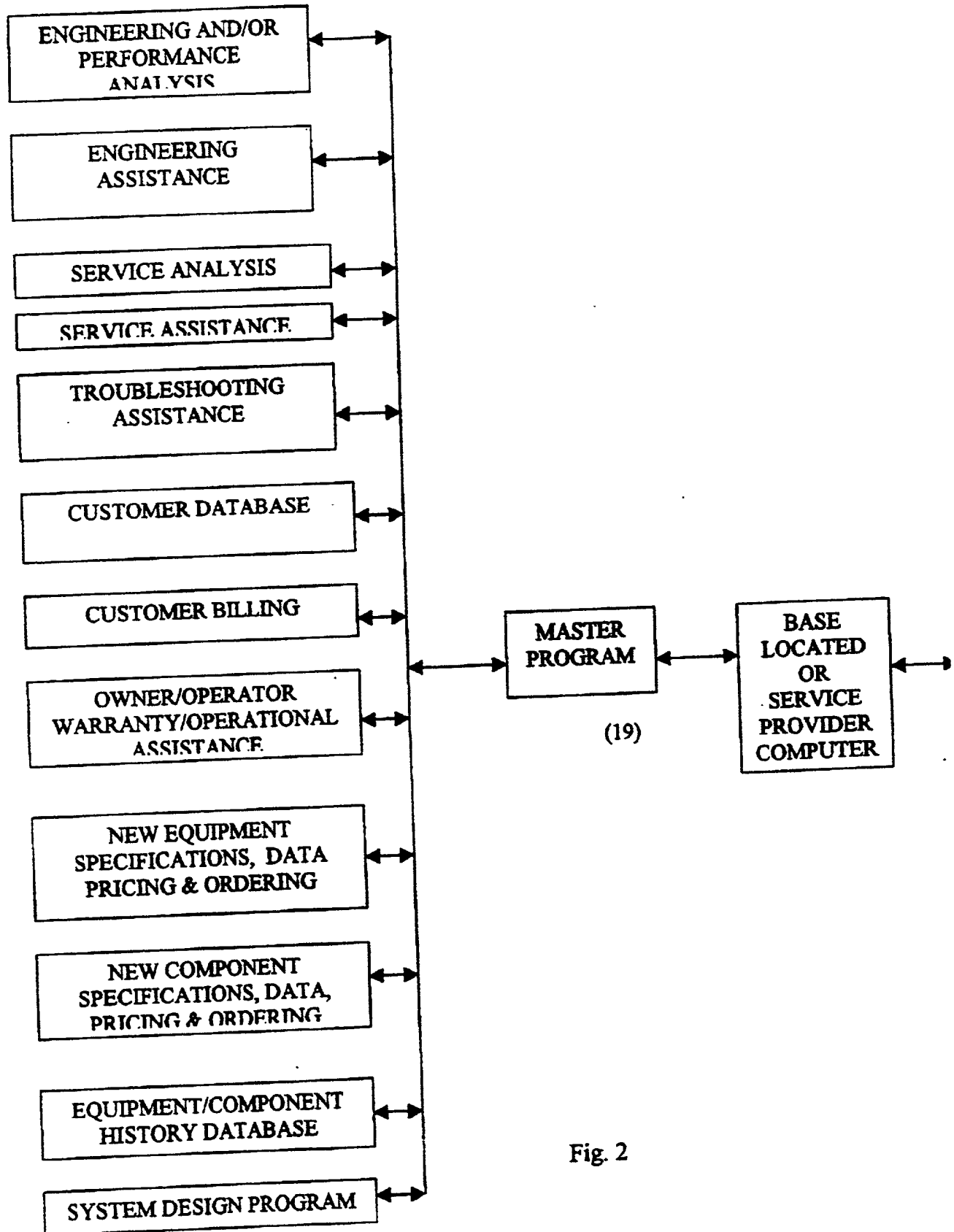


Fig. 2

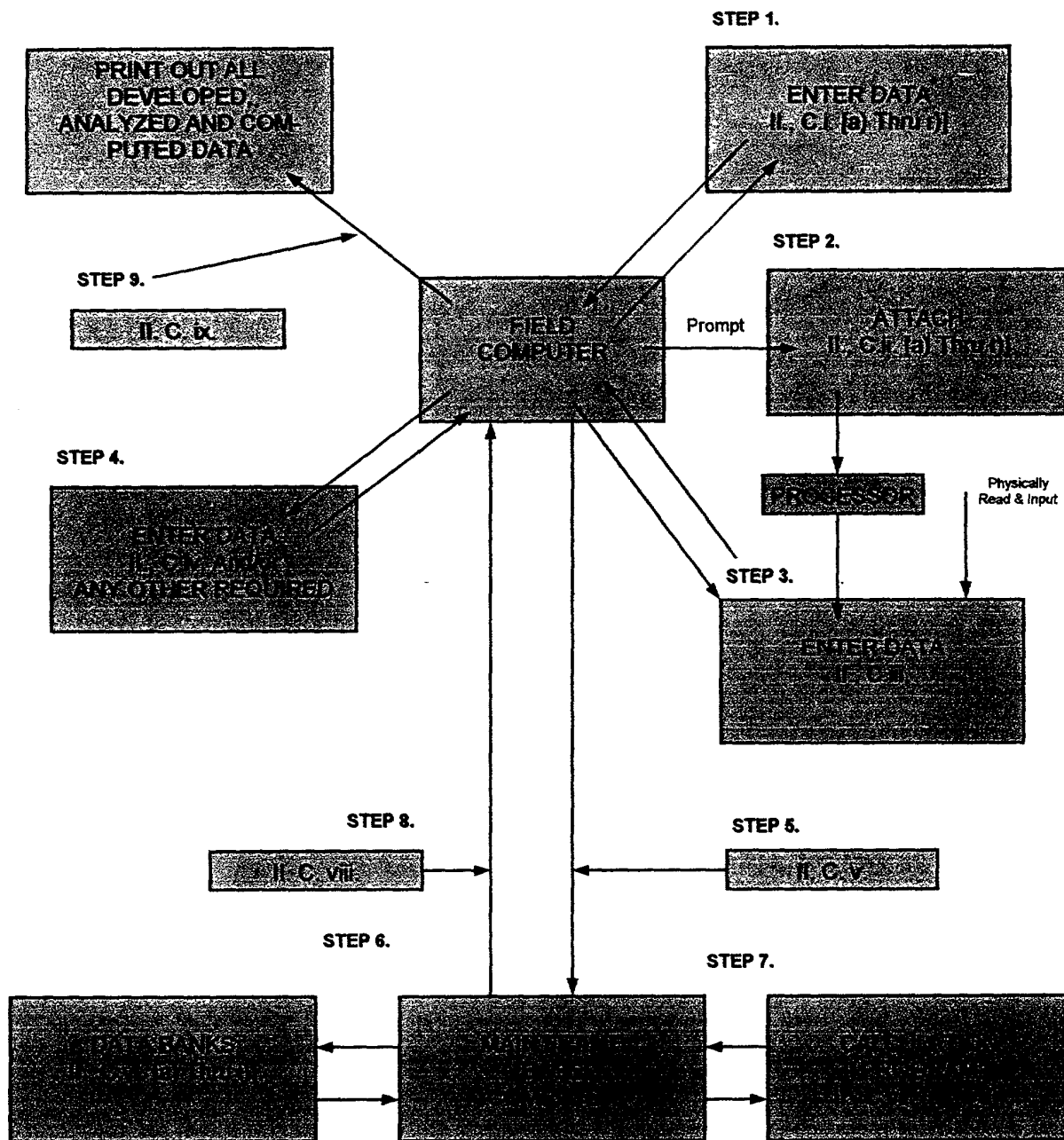


FIG. 3

054950-00001

**PART A**

1000

1000

*diz*

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U/P	Refrin
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H/P	Refig

serial no	model no	fan speed
1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18
19	20	21
22	23	24
25	26	27
28	29	30
31	32	33
34	35	36
37	38	39
40	41	42
43	44	45
46	47	48
49	50	51
52	53	54
55	56	57
58	59	60
61	62	63
64	65	66
67	68	69
70	71	72
73	74	75
76	77	78
79	80	81
82	83	84
85	86	87
88	89	90
91	92	93
94	95	96
97	98	99
100	101	102
103	104	105
106	107	108
109	110	111
112	113	114
115	116	117
118	119	120
121	122	123
124	125	126
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139	140	141
142	143	144
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322	323	324
325	326	327
328	329	330
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340	341	342
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355	356	357
358	359	360
361	362	363
364	365	366
367</		

fan speed

	$\rho_{1,2}^{\pm} = \rho_{1,2}^{\pm}(\mathbf{r})$
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<p>    National Bureau of Economic Research </p>	<p>    National Bureau of Economic Research </p>
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[illegible][illegible]

model no	serial no	hp	FLA/RLA	LRA	vols	phase	hz

mfg	model no	serial no	hp	ip III	16K/32K	EGA	VGA

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Return Plenum Dim

Account	Total Cost (\$)
Account 1	100
Account 2	200
Account 3	300
Account 4	400
Account 5	500
Account 6	600
Account 7	700
Account 8	800
Account 9	900
Account 10	1000

Item	Quantity	Unit Price	Total Cost (\$)
...	...	...	...
<b>Total Cost (\$)</b>			

Total Cost (\$)

FIG. 4a

**Condition of:**

**Good**

**Bad**

### Explanation

## Obvious Oil Leak Locations

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

FIG. 4b

### III. OPERATIONAL DATA SHEET:

Temperatures, Refrigerant (X which applies)	Fahrenheit	Celsius
Hot Gas Discharge at Compressor		
Hot Gas Entering Condenser		
Mid Condenser Coil		
Liquid out of condenser		
Liquid into expansion device		
Mid Evaporator coil		
Suction line after evaporator		
Suction line into compressor		
Heat Pump, Suction line into rev Valve		
Heat Pump, Hot Gas line into rev Valve		

Temperatures, Air (X which applies)	Fahrenheit	Celsius
Air Entering Condenser	DB	
Air Entering Condenser	WB	
Air Exiting Condenser	DB	
Air Entering Evaporator	DB	
Air Entering Evaporator	WB	
Air Exiting Evaporator	DB	
Air Exiting Evaporator	WB	
Air Exiting Air Handler	DB	
Air Exiting Air Handler	WB	

Pressures, Refrigerant (X which applies)	PSIG	PSIA
Hot Gas Discharge @ compressor		
Hot Gas Discharge @ condenser		
Liquid Refrigerant exit condenser		
Liquid Refrigerant enter Exp Device		
Suction Gas exiting evaporator		
Suction Gas entering compressor		

Pressures, Air Flow (in inches water gauge)	
Static before Air Handler	
Static after Air Handler	
Velocity pressure Transverse Avg at straight duct section with dimensions given for main supply or return plenums	

Electrical Data (Running)		Amps		Volts	Phase	hz
		L1	L2	L3		
Compressor No 1						
Compressor No 2						
Compressor No 3						
Compressor No 4						
Condenser Fan Motors						
Quantity						
Blower Motors						
Quantity						
Pumps - Chiller Circ	1					
	2					
Evaporative Tower	1					
	2					
Water Cooled Circ	1					
	2					

Temperatures, Water (X which applies)	Fahrenheit	Celsius
Chiller	EWT	
	LCWT	
Water Cooled Condenser	EWT	
	LWT	

Water Flow Rate (X which applies)	PSIG	PSIA
Chiller, Evaporator	Return Line	
Chiller, Evaporator	Supply Line	
Water Cooled Equip		
Condenser	Return Line	
Condenser	Supply Line	

Fig. 4c

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7/22

#### IV. TROUBLE SHOOTING QUESTIONNAIRE DATA SHEET

Mark all those that apply (X)

<input type="checkbox"/>	Chiller Condenser	<input type="checkbox"/>	Geothermal
<input type="checkbox"/>	Air Cooled	<input type="checkbox"/>	Dual Source
<input type="checkbox"/>	Water Cooled		

Symptom (examples - list to be added to)

<input type="checkbox"/>	Unit will not run
<input type="checkbox"/>	Outdoor unit section will not run
<input type="checkbox"/>	Compressor will not start
<input type="checkbox"/>	Outdoor fan motor will not start
<input type="checkbox"/>	Outdoor unit condenser water pump will not start
<input type="checkbox"/>	Compressor hums but will not start
<input type="checkbox"/>	Compressor cycling on overload
<input type="checkbox"/>	Compressor off on high pressure control
<input type="checkbox"/>	Noisy compressor
<input type="checkbox"/>	Compressor loses oil
<input type="checkbox"/>	No cooling, but compressor runs continuously
<input type="checkbox"/>	Liquid Refrigerant flooding compressor (cap tube system)
<input type="checkbox"/>	Liquid Refrigerant flooding compressor (fixed orifice)
<input type="checkbox"/>	Liquid Refrigerant flooding compressor (TXV)
<input type="checkbox"/>	High head pressure
<input type="checkbox"/>	Low head pressure
<input type="checkbox"/>	High Suction Pressure
<input type="checkbox"/>	Low suction pressure
<input type="checkbox"/>	High operating costs
<input type="checkbox"/>	Other
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

<input type="checkbox"/>	Water Tower
Symptom (examples - list to be added to)	
<input type="checkbox"/>	Fan motor will not run
<input type="checkbox"/>	Cooling return water temperature high
<input type="checkbox"/>	Scale buildup is rapid
<input type="checkbox"/>	Sump water hardness is high
<input type="checkbox"/>	Other
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

<input type="checkbox"/>	Fan Coil Unit
Symptom (examples - list to be added to)	
<input type="checkbox"/>	Fan motor will not run
<input type="checkbox"/>	No cooling, but fan is on
<input type="checkbox"/>	Too much cooling
<input type="checkbox"/>	Other
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Fig. 4d

FORM 654260

85-2

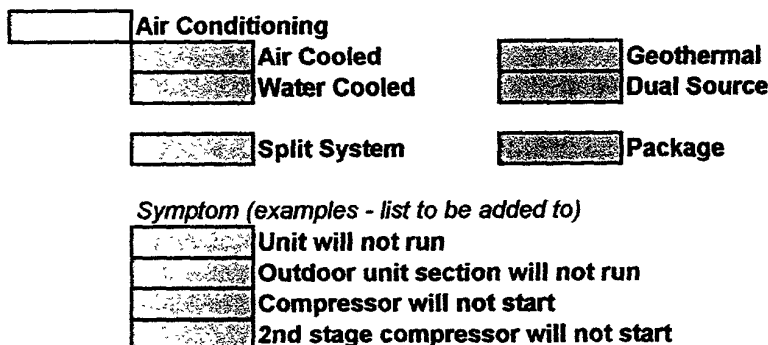
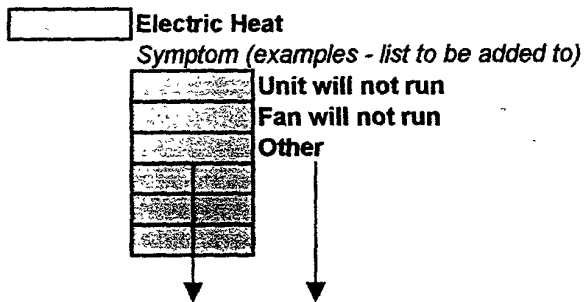
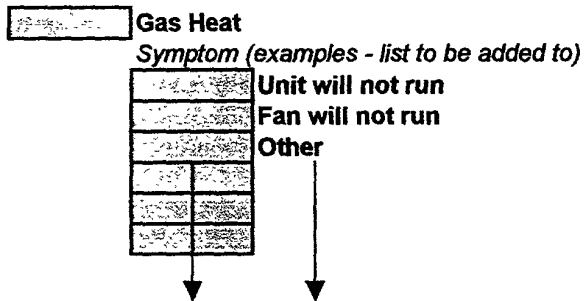
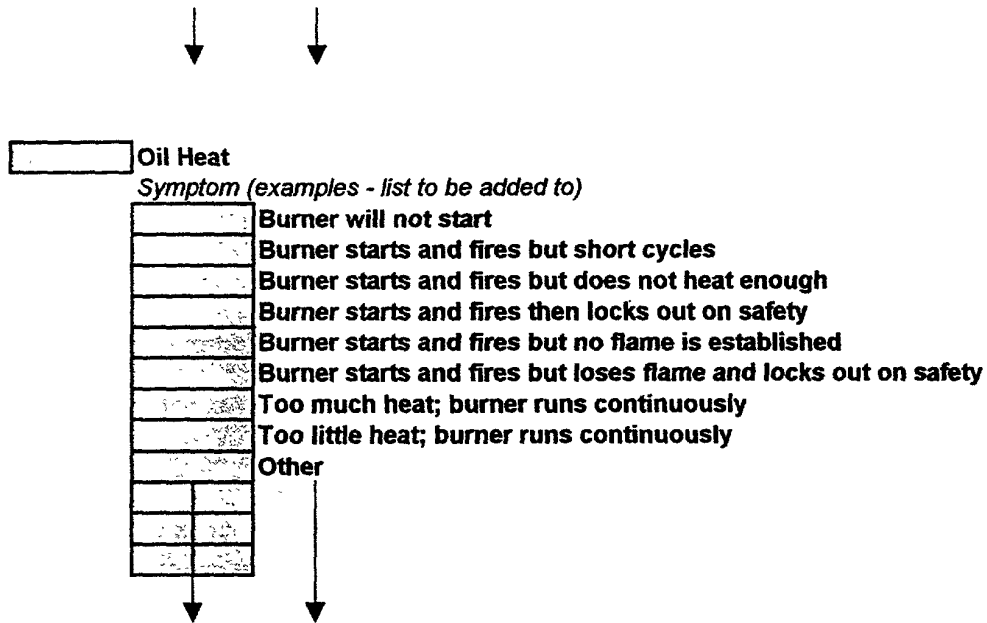


Fig 4e

[illegible]



9522

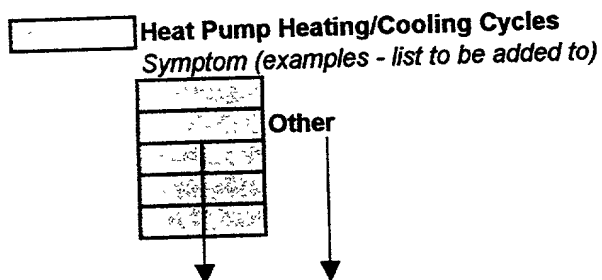
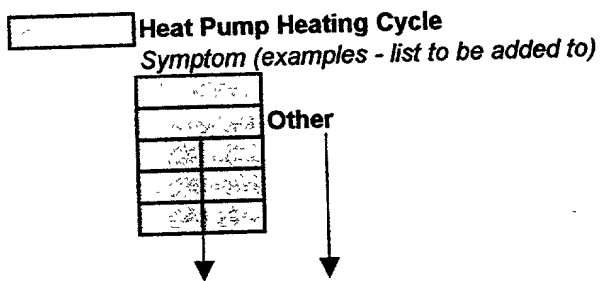
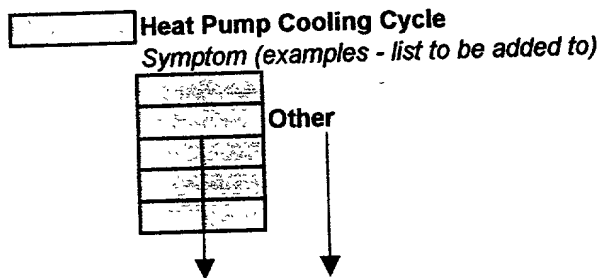
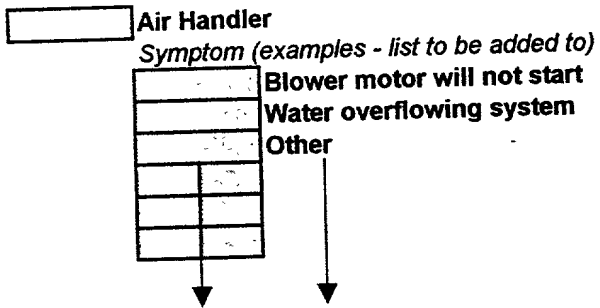
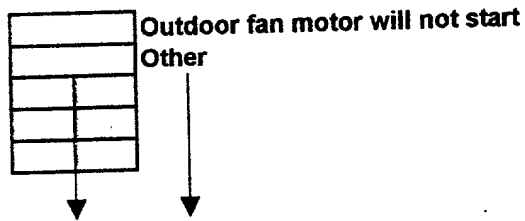


Fig 4f

[illegible]

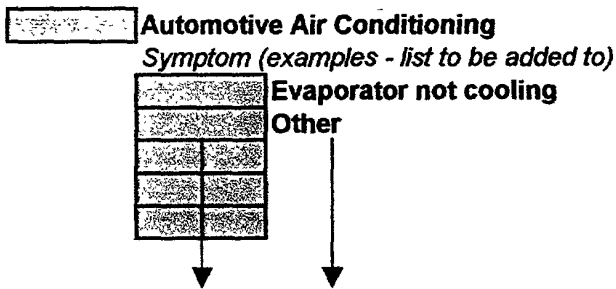
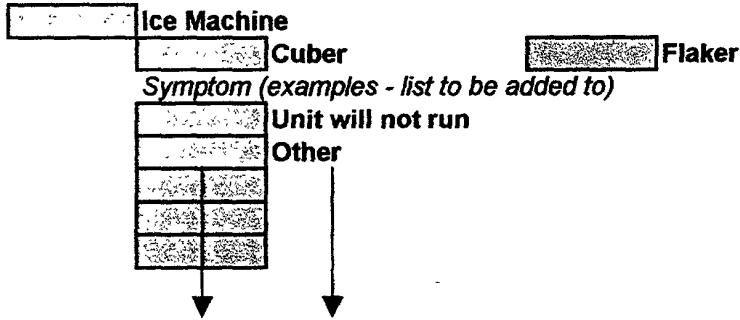
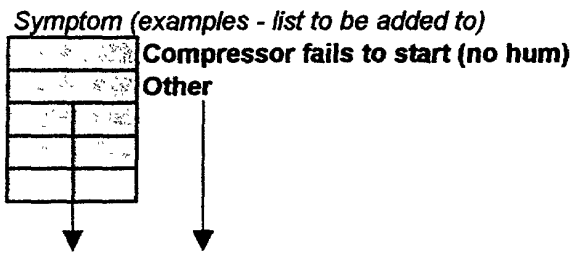


Fig. 49

V. TEST AND BALANCE - AIR VOLUME DATA SHEET

A. Mark all those that apply (X)

	Constant volume system
	VAV System
	Other

↓ ↓

B. Fill in all appropriate (highlighted) below:

Example:

	Design Air Flow VAV #1
	Other

↓ ↓

Fig. 4h



ET/8223695845  
13 of 22

### III. OPERATIONAL DATA SHEET:

Temperatures, Refrigerant (X which applies)	Fahrenheit	Celsius
Hot Gas Discharge at Compressor		
Hot Gas Entering Condenser		
Mid Condenser Coil		
Liquid out of condenser		
Liquid into expansion device		
Mid Evaporator coil		
Suction line after evaporator		
Suction line into compressor		
Heat Pump, Suction line into rev Valve		
Heat Pump, Hot Gas line into rev Valve		

Temperatures, Air (X which applies)	Fahrenheit	Celsius
Air Entering Condenser	DB	
Air Entering Condenser	WB	
Air Exiting Condenser	DB	
Air Entering Evaporator	DB	
Air Entering Evaporator	WB	
Air Exiting Evaporator	DB	
Air Exiting Evaporator	WB	
Air Exiting Air Handler	DB	
Air Exiting Air Handler	WB	

Pressures, Refrigerant (X which applies)	PSIG	PSIA
Hot Gas Discharge @ compressor		
Hot Gas Discharge @ condenser		
Liquid Refrigerant exit condenser		
Liquid Refrigerant enter Exp Device		
Suction Gas exiting evaporator		
Suction Gas entering compressor		

Pressures, Air Flow (in inches water gauge)	
Static before Air Handler	
Static after Air Handler	
Velocity pressure Transverse Avg at straight duct section with dimensions given for main supply or return plenums	

Electrical Data (Running)		Amps	Volts	Phase	hz
		L1	L2	L3	
Compressor No 1					
Compressor No 2					
Compressor No 3					
Compressor No 4					
Condenser Fan Motors					
Quantity					
Blower Motors					
Quantity					
Pumps - Chiller Circ	1				
	2				
Evaporative Tower	1				
	2				
Water Cooled Circ	1				
	2				

Temperatures, Water (X which applies)	Fahrenheit	Celsius
Chiller	EWT	
	LCWT	
Water Cooled Condenser	EWT	
	LWT	

Water Flow Rate (X which applies)	PSIG	PSIA
Chiller, Evaporator Return Line		
Chiller, Evaporator Supply Line		
Water Cooled Equip		
Condenser Return Line		
Condenser Supply Line		

FIG. 5b

I. AVAILABLE INFORMATION DATA SHEET:

PART A

TYPE OF ANALYSIS (X which applies): Perf ☒ Trblshg ☐ T & B ☐

Job Name: XYZ Homeowner Phone: (888) 555-8000 Fax: (888) 555-8000

Job Address: 3333 Anywhere St. city St. Pete state Fla. zip 32655

Other: (e-mail) WUU.Homes@comcast.net other

Date: 7/2/01 Start Time: 1:40 PM

Refrigerant Type: R-22 Air-cooled (X) ☒ Water-cooled (X) ☐

Unit Number or Specific Location: Only system at residence

Type of System (X): Chiller ☐ Package ☐ Split ☒ Gas Heat ☐ Electric Heat ☒

H/P ☒ A/C ☐ Refrig ☐

PART B

manuf	model no	serial no	quantity	model no	serial no	fan speed
EVCON	1	BRHS0408	1	132001033	N.A.	
EVCON		AH7D-0758		ALC880321	High	

DATA PLATE INFORMATION

mfg	model no	serial no	hp	rpm	FLA/RLA	LRA	volts	phase	hz
A.O. Smith	N.A.	N.A.	1/3	1100	1.4	N/A	208/230	1	60
A.O. Smith	N.A.	N.A.	1/2	1100	2.2	N/A	208/230	1	60
Brüel	H25A600A	24Y071672	N.A.	N.A.	21.7	135	208/230	1	60

Main Supply Plenum Dimensions

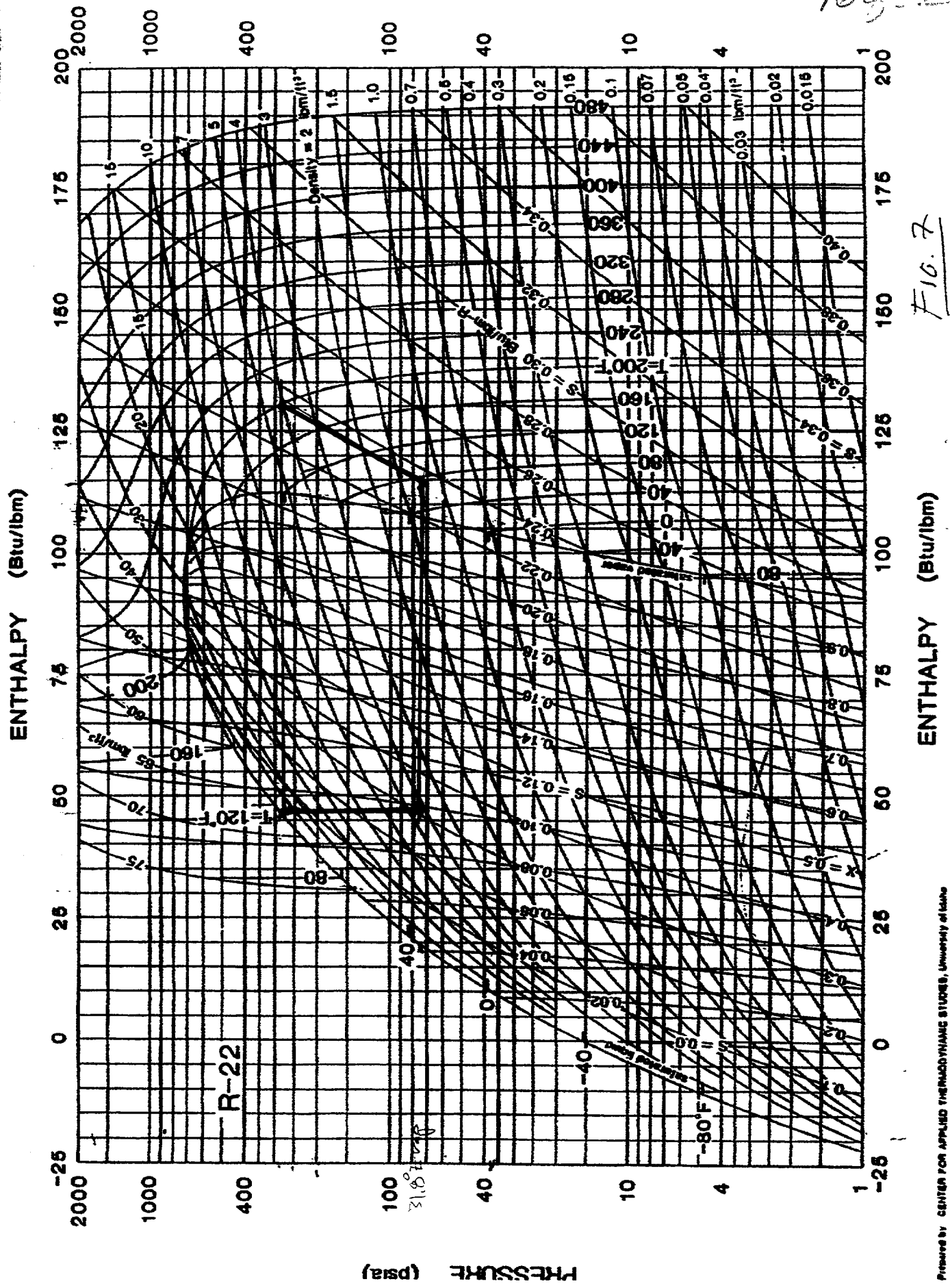
Previous Month Electrical Consumption (KW)	20'x20'
Previous Month System Water Consumption (Gals)	1846
Previous Month Gas Consumption (Cu Ft)	167.99

Fig. 6a

1994-1995		1995-1996		1996-1997		1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028		2028-2029		2029-2030		2030-2031		2031-2032		2032-2033		2033-2034		2034-2035		2035-2036		2036-2037		2037-2038		2038-2039		2039-2040		2040-2041		2041-2042		2042-2043		2043-2044		2044-2045		2045-2046		2046-2047		2047-2048		2048-2049		2049-2050		2050-2051		2051-2052		2052-2053		2053-2054		2054-2055		2055-2056		2056-2057		2057-2058		2058-2059		2059-2060		2060-2061		2061-2062		2062-2063		2063-2064		2064-2065		2065-2066		2066-2067		2067-2068		2068-2069		2069-2070		2070-2071		2071-2072		2072-2073		2073-2074		2074-2075		2075-2076		2076-2077		2077-2078		2078-2079		2079-2080		2080-2081		2081-2082		2082-2083		2083-2084		2084-2085		2085-2086		2086-2087		2087-2088		2088-2089		2089-2090		2090-2091		2091-2092		2092-2093		2093-2094		2094-2095		2095-2096		2096-2097		2097-2098		2098-2099		2099-2100		2100-2101		2101-2102		2102-2103		2103-2104		2104-2105		2105-2106		2106-2107		2107-2108		2108-2109		2109-2110		2110-2111		2111-2112		2112-2113		2113-2114		2114-2115		2115-2116		2116-2117		2117-2118		2118-2119		2119-2120		2120-2121		2121-2122		2122-2123		2123-2124		2124-2125		2125-2126		2126-2127		2127-2128		2128-2129		2129-2130		2130-2131		2131-2132		2132-2133		2133-2134		2134-2135		2135-2136		2136-2137		2137-2138		2138-2139		2139-2140		2140-2141		2141-2142		2142-2143		2143-2144		2144-2145		2145-2146		2146-2147		2147-2148		2148-2149		2149-2150		2150-2151		2151-2152		2152-2153		2153-2154		2154-2155		2155-2156		2156-2157		2157-2158		2158-2159		2159-2160		2160-2161		2161-2162		2162-2163		2163-2164		2164-2165		2165-2166		2166-2167		2167-2168		2168-2169		2169-2170		2170-2171		2171-2172		2172-2173		2173-2174		2174-2175		2175-2176		2176-2177		2177-2178		2178-2179		2179-2180		2180-2181		2181-2182		2182-2183		2183-2184		2184-2185		2185-2186		2186-2187		2187-2188		2188-2189		2189-2190		2190-2191		2191-2192		2192-2193		2193-2194		2194-2195		2195-2196		2196-2197		2197-2198		2198-2199		2199-2200		2200-2201		2201-2202		2202-2203		2203-2204		2204-2205		2205-2206		2206-2207		2207-2208		2208-2209		2209-2210		2210-2211		2211-2212		2212-2213		2213-2214		2214-2215		2215-2216		2216-2217		2217-2218		2218-2219		2219-2220		2220-2221	
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FIG. 6b

ET 18.223695845  
169.22





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17 of 22  
19.9

# Thermophysical Properties of Refrigerants

Refrigerant 22 (Chlorodifluoromethane) Properties of Saturated Liquid and Saturated Vapor

Temp,* °F	Pressure, psia	Density, lb/ft <sup>3</sup>		Volume, ft <sup>3</sup> /lb		Enthalpy, Btu/lb		Entropy, Btu/lb·°F		Specific Heat c <sub>p</sub> , Btu/lb·°F		Velocity of Sound, ft/s		Viscosity, lb <sub>m</sub> /ft·h		Thermal Cond., Btu/h·ft·°F		Surface Tension, dyne/cm	Temp,* °F	
		Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor			
-250.00	—	107.37	—	—	—	-63.169	76.604	-0.21914	0.44952	—	0.1018	1.2914	—	395.	—	—	—	—	-250.00	
-240.00	—	106.41	—	—	—	-56.462	77.629	-0.18786	0.42332	—	0.1033	1.2860	—	403.	—	—	—	—	-240.00	
-230.00	—	105.48	—	—	—	-51.569	78.669	-0.16605	0.40101	—	0.1048	1.2807	—	411.	—	—	—	36.75	-230.00	
-220.00	0.002	104.58	16805	—	—	-47.705	79.724	-0.14958	0.38211	—	0.1064	1.2754	—	419.	—	—	—	35.70	-220.00	
-210.00	0.004	103.70	6982.6	—	—	-44.426	80.796	-0.13616	0.36538	—	0.1080	1.2703	—	427.	—	—	—	34.67	-210.00	
-200.00	0.010	102.81	3151.5	—	—	-41.474	81.882	-0.12457	0.35048	—	0.1096	1.2653	—	435.	—	—	—	33.63	-200.00	
-190.00	0.022	101.92	1527.4	—	—	-38.706	82.984	-0.11411	0.33715	—	0.1113	1.2604	—	442.	—	—	—	32.61	-190.00	
-180.00	0.044	101.03	787.79	—	—	-36.038	84.100	-0.10439	0.32518	—	0.1130	1.2558	—	449.	—	—	—	31.59	-180.00	
-170.00	0.084	100.12	429.22	—	—	-33.424	85.230	-0.09521	0.31441	—	0.1147	1.2515	—	456.	—	—	—	30.58	-170.00	
-160.00	0.151	99.22	245.51	—	—	-30.839	86.373	-0.08644	0.30470	—	0.1165	1.2474	—	463.	—	—	—	29.57	-160.00	
-150.00	0.262	98.30	146.65	—	—	-28.269	87.528	-0.07800	0.29594	—	0.1183	1.2437	—	470.	—	—	—	28.57	-150.00	
-140.00	0.435	97.38	91.059	—	—	-25.708	88.692	-0.06986	0.28801	—	0.1201	1.2403	—	476.	—	—	—	27.57	-140.00	
-130.00	0.696	96.46	58.544	—	—	-23.150	89.864	-0.06198	0.28082	—	0.1221	1.2374	—	482.	—	—	—	26.59	-130.00	
-120.00	1.080	95.53	38.833	—	—	-20.594	91.040	-0.05435	0.27430	0.2555	0.1241	1.2349	3483.	488.	—	—	—	25.61	-120.00	
-110.00	1.626	94.60	26.494	—	—	-18.038	92.218	-0.04694	0.26838	0.2555	0.1262	1.2329	3384.	494.	—	—	0.0765	24.64	-110.00	
-100.00	2.384	93.66	18.540	—	—	-15.481	93.397	-0.03973	0.26298	0.2557	0.1285	1.2315	3290.	500.	—	—	0.0749	23.67	-100.00	
-90.00	3.413	92.71	13.275	—	—	-12.921	94.572	-0.03271	0.25807	0.2561	0.1308	1.2307	3198.	505.	—	—	0.0734	0.00292	22.71	-90.00
-80.00	4.778	91.75	9.7044	—	—	-10.355	95.741	-0.02587	0.25357	0.2567	0.1334	1.2305	3110.	510.	—	—	0.0718	0.00315	21.76	-80.00
-70.00	6.555	90.79	7.2285	—	—	-7.783	96.901	-0.01919	0.24945	0.2574	0.1361	1.2310	3023.	514.	—	—	0.0703	0.00338	20.82	-70.00
-60.00	8.830	89.81	5.4766	—	—	-5.201	98.049	-0.01266	0.24567	0.2584	0.1389	1.2323	2937.	519.	—	—	0.0688	0.00360	19.89	-60.00
-50.00	11.696	88.83	4.2138	—	—	-2.608	99.182	-0.00627	0.24220	0.2596	0.1420	1.2344	2852.	522.	—	—	0.0673	0.00382	18.96	-50.00
-45.00	13.383	88.33	3.7160	—	—	-1.306	99.742	-0.00312	0.24056	0.2604	0.1436	1.2358	2810.	524.	—	—	0.0665	0.00393	18.50	-45.00
-41.44b	14.696	87.97	3.4048	—	—	-0.377	100.138	-0.00090	0.23944	0.2609	0.1448	1.2369	2780.	525.	—	—	0.0660	0.00401	18.18	-41.44
-40.00	15.255	87.82	3.2880	—	—	0.000	100.296	0.00000	0.23899	0.2611	0.1453	1.2374	2768.	526.	—	—	0.0658	0.00404	18.05	-40.00
-35.00	17.329	87.32	2.9185	—	—	1.310	100.847	0.00309	0.23748	0.2620	0.1471	1.2393	2725.	527.	—	—	0.0651	0.00414	17.59	-35.00
-30.00	19.617	86.81	2.5984	—	—	2.624	101.391	0.00616	0.23602	0.2629	0.1489	1.2414	2683.	529.	—	—	0.0643	0.00425	17.14	-30.00
-25.00	22.136	86.29	2.3202	—	—	3.944	101.928	0.00920	0.23462	0.2638	0.1507	1.2437	2641.	530.	—	—	0.0636	0.00435	16.69	-25.00
-20.00	24.899	85.77	2.0774	—	—	5.268	102.461	0.01222	0.23327	0.2648	0.1527	1.2463	2599.	531.	—	—	0.0629	0.00445	16.24	-20.00
-15.00	27.924	85.25	1.8650	—	—	6.598	102.986	0.01521	0.23197	0.2659	0.1547	1.2493	2557.	532.	—	—	0.0622	0.00456	15.79	-15.00
-10.00	31.226	84.72	1.6784	—	—	7.934	103.503	0.01818	0.23071	0.2671	0.1567	1.2525	2515.	533.	—	—	0.0614	0.00466	—	-10.00
-5.00	34.821	84.18	1.5142	—	—	9.276	104.013	0.02113	0.22949	0.2684	0.1589	1.2560	2473.	534.	—	—	0.0607	0.00476	—	-5.00
0.00	38.726	83.64	1.3691	—	—	10.624	104.515	0.02406	0.22832	0.2697	0.1611	1.2599	2431.	535.	0.615	0.0268	0.0600	0.00486	—	0.00
5.00	42.960	83.09	1.2406	—	—	11.979	105.009	0.02697	0.22718	0.2710	0.1634	1.2641	2389.	535.	0.597	0.0271	0.0593	0.00496	—	5.00
10.00	47.538	82.54	1.1265	—	—	13.342	105.493	0.02987	0.22607	0.2725	0.1658	1.2687	2346.	535.	0.580	0.0274	0.0586	0.00506	—	10.00
15.00	52.480	81.98	1.0250	—	—	14.712	105.968	0.03275	0.22500	0.2740	0.1683	1.2737	2304.	536.	0.563	0.0276	0.0579	0.00516	—	15.00
20.00	57.803	81.41	0.9343	—	—	16.090	106.434	0.03561	0.22395	0.2756	0.1709	1.2792	2262.	536.	0.546	0.0279	0.0572	0.00526	—	20.00
25.00	63.526	80.84	0.8532	—	—	17.476	106.891	0.03846	0.22294	0.2773	0.1737	1.2851	2219.	536.	0.530	0.0282	0.0566	0.00536	—	25.00
30.00	69.667	80.26	0.7804	—	—	18.871	107.336	0.04129	0.22195	0.2791	0.1765	1.2915	2177.	536.	0.515	0.0284	0.0559	0.00546	—	30.00
35.00	76.245	79.67	0.7150	—	—	20.275	107.769	0.04411	0.22098	0.2809	0.1794	1.2984	2134.	535.	0.499	0.0287	0.0552	0.00555	—	35.00
40.00	83.280	79.07	0.6561	—	—	21.688	108.191	0.04692	0.22004	0.2829	0.1825	1.3059	2091.	535.	0.484	0.0290	0.0545	0.00565	—	40.00
45.00	90.791	78.46	0.6029	—	—	23.111	108.600	0.04972	0.21912	0.2849	0.1857	1.3141	2048.	534.	0.470	0.0292	0.0538	0.00575	—	45.00
50.00	98.799	77.84	0.5548	—	—	24.544	108.997	0.05251	0.21821	0.2870	0.1891	1.3229	2005.	533.	0.456	0.0295	0.0532	0.00584	—	50.00
55.00	107.32	77.22	0.5111	—	—	25.988	109.379	0.05529	0.21732	0.2893	0.1927	1.3324	1962.	532.	0.442	0.0298	0.0525	0.00594	—	55.00
60.00	116.38	76.58	0.4715	—	—	27.443	109.748	0.05806	0.21644	0.2916	0.1964	1.3428	1919.	531.	0.429	0.0301	0.0518	0.00604	—	60.00
65.00	126.00	75.93	0.4355	—	—	28.909	110.103	0.06082	0.21557	0.2941	0.2003	1.3540	1876.	530.	0.416	0.0303	0.0512	0.00613	—	65.00
70.00	136.19	75.27	0.4026	—	—	30.387	110.441	0.06358	0.21472	0.2967	0.2045	1.3663	1832.	528.	0.404	—	0.0505	0.00623	—	70.00
75.00	146.98	74.60	0.3726	—	—	31.877	110.761	0.06633	0.21387	0.2994	0.2089	1.3796	1788.	527.	0.392	—	0.0499	0.00632	—	75.00
80.00	158.40	73.92	0.3451	—	—	33.381	111.066	0.06907	0.21302	0.3024	0.2135	1.3941	1744.	525.	0.380	—	0.0492	0.00642	—	80.00
85.00	170.45	73.22	0.3199	—	—	34.898	111.350	0.07182	0.21218	0.3055	0.2185	1.4100	1700.	523.	0.369	—	0.0486	0.00652	—	85.00
90.00	183.17	72.51	0.2968	—	—	36.430	111.616	0.07456	0.21134											

ET/822362845

18 of 22

TABLE 6-6

## Superheated Vapor — Constant Pressure Tables at Pressure Intervals — R-22

V = volume in cuft/lb; H = enthalpy in Btu/lb; S = entropy in Btu/(lb)(°R) (saturation properties in parentheses)

504 147  
= 72.7

70000" 5542660

Temp. °F	Absolute Pressure lbf/sq in.														
	75			80			85			90			95		
	60.304 PSIG (34.13 F)			65.304 PSIG (37.76 F)			70.304 PSIG (41.22 F)			75.304 PSIG (44.53 F)			80.304 PSIG (47.71 F)		
	V	H	S	V	H	S	V	H	S	V	H	S	V	H	S
	(0.72740)	(107.644)	(0.22098)	(0.68318)	(107.954)	(0.22029)	(0.64398)	(108.244)	(0.21964)	(0.60897)	(108.516)	(0.21903)	(0.57751)	(108.772)	(0.21845)
40	0.74013	108.862	0.22303	0.66782	108.347	0.22107	—	—	—	—	—	—	—	—	—
50	0.78148	110.393	0.22645	0.70622	110.098	0.22454	0.66115	109.799	0.22272	0.61924	109.496	0.22096	0.58165	109.187	0.21928
60	0.82298	112.119	0.22981	0.72820	111.843	0.22793	0.69030	111.564	0.22614	0.63766	111.280	0.22443	0.59944	110.992	0.22277
70	0.86298	113.842	0.23309	0.74780	113.584	0.23125	0.69906	113.322	0.22949	0.65568	113.056	0.22781	0.61681	112.787	0.22819
80	0.82323	115.566	0.23632	0.76708	115.323	0.23450	0.71748	115.076	0.23278	0.67334	114.827	0.23112	0.63381	114.575	0.22963
90	0.84320	117.291	0.23948	0.78605	117.061	0.23770	0.73559	116.829	0.23599	0.69069	116.594	0.23437	0.65048	116.357	0.23281
100	0.86291	119.019	0.24260	0.80477	118.801	0.24083	0.75343	118.582	0.23915	0.70777	118.360	0.23755	0.66687	118.137	0.23002
110	0.88239	120.749	0.24566	0.82325	120.544	0.24392	0.77104	120.336	0.24226	0.72469	120.127	0.24068	0.68301	119.915	0.23917
120	0.90167	122.486	0.24868	0.84152	122.290	0.24696	0.76842	122.093	0.24532	0.74120	121.894	0.24376	0.69892	121.694	0.24228
130	0.92076	124.226	0.25166	0.85960	124.040	0.24995	0.80561	123.853	0.24833	0.75780	123.665	0.24678	0.71462	123.475	0.24531
140	0.93968	125.973	0.25460	0.87751	125.796	0.25290	0.82263	125.618	0.25130	0.77383	125.439	0.24977	0.73015	125.259	0.24831
150	0.95844	127.726	0.25750	0.89526	127.558	0.25582	0.83948	127.389	0.25422	0.78989	127.218	0.25271	0.74550	127.047	0.25128
160	0.97707	129.487	0.26036	0.91286	129.326	0.25869	0.85619	129.165	0.25711	0.80581	129.002	0.25561	0.76071	128.839	0.25418
170	0.99557	131.255	0.26319	0.93034	131.102	0.26154	0.87277	130.948	0.25997	0.82159	130.793	0.25848	0.77578	130.637	0.25706
180	1.0139	133.032	0.26599	0.94770	132.885	0.26435	0.88923	132.738	0.26279	0.83725	132.589	0.26131	0.79073	132.440	0.25990
190	1.0322	134.817	0.26876	0.96495	134.677	0.26712	0.90556	134.535	0.26558	0.85279	134.393	0.26411	0.80556	134.251	0.26271
200	1.0504	136.611	0.27150	0.98209	136.476	0.26987	0.92182	136.341	0.26833	0.86824	136.205	0.26687	0.82029	136.068	0.26548
210	1.0685	138.414	0.27421	0.99915	138.284	0.27258	0.93797	138.154	0.27106	0.88359	138.024	0.26961	0.83492	137.893	0.26823
220	1.0865	140.226	0.27690	1.0161	140.101	0.27529	0.95404	139.977	0.27376	0.89885	139.851	0.27232	0.84948	139.725	0.27094
230	1.1044	142.047	0.27956	1.0330	141.928	0.27795	0.97003	141.808	0.27844	0.92403	141.887	0.27500	0.86393	141.566	0.27363

FIG-9

ET 1822369.5803  
19822

# PERFORMANCE TABLE

BRISTOL COMPRESSORS  
MODEL H25A56QCBC 60Hz

REFRIGERANT : R22  
DISPLACEMENT : 5.46 CUBIC INCHES  
MOTOR : 2 -POLE  
VOLTAGE : 230-1-60  
SUBCOOLING : 15.0 deg F  
SUPERHEAT : 20.0 deg F

Release EN: A29905  
Revision EN: B15908 Date: 7/94  
Preliminary Data

## CAPACITY (BTU/HR)

		EVAPORATING TEMPERATURE, deg F															
		-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
CONDENSING TEMPERATURE deg F	80	12512	15425	18645	22184	26057	30279	34864	39825	45178	50936	57113	63724	70782	78303	83700	88575
	90	11331	14025	17018	20325	23960	27937	32271	36975	42064	47552	53453	59782	66553	73779	81176	89051
	100	10079	12554	15322	18398	21796	25530	29614	34063	38890	44110	49737	55785	62269	69203	76600	84475
	110		11057	13602	16449	19611	23103	26939	31134	35700	40654	46008	51777	57976	64618	71717	79288
	120				14520	17448	20700	24290	28231	32539	37227	42310	47802	53717	60068	66872	74141
	130						18365	21710	25400	29450	33875	38688	43903	49536	55599	62108	69076
	140								22684	26478	30641	35185	40126	45478	51254	57469	64138
	150											31846	36514	41586	47077	53000	59371

## POWER (WATTS)

		EVAPORATING TEMPERATURE, deg F															
		-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
CONDENSING TEMPERATURE deg F	80	2163	2319	2465	2599	2721	2830	2925	3005	3071	3121	3155	3172	3171	3153		
	90	2231	2404	2566	2719	2860	2990	3108	3213	3304	3382	3444	3492	3523	3538		
	100	2271	2459	2640	2812	2974	3127	3268	3399	3518	3624	3716	3795	3860	3909	3943	3961
	110		2487	2687	2879	3064	3240	3407	3565	3712	3847	3972	4083	4182	4268	4339	4395
	120				2922	3130	3331	3525	3710	3887	4054	4210	4356	4491	4613	4723	4819
	130						3400	3621	3836	4043	4242	4433	4614	4785	4946	5096	5234
	140								3943	4182	4414	4640	4858	5067	5267	5458	5639
	150											4832	5087	5336	5577	5810	6035

## CURRENT (AMPS)

		EVAPORATING TEMPERATURE, deg F															
		-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
CONDENSING TEMPERATURE deg F	80	9.9	10.6	11.3	11.8	12.3	12.8	13.1	13.4	13.7	13.9	14.1	14.2	14.2	14.3		
	90	10.1	10.9	11.6	12.3	12.8	13.4	13.9	14.3	14.6	15.0	15.2	15.5	15.7	15.9		
	100	10.1	11.0	11.9	12.6	13.3	13.9	14.5	15.1	15.5	16.0	16.4	16.8	17.1	17.4	17.7	18.0
	110		11.1	12.0	12.9	13.7	14.4	15.1	15.8	16.4	17.0	17.5	18.0	18.5	19.0	19.4	19.8
	120				13.1	14.0	14.8	15.7	16.4	17.2	17.9	18.6	19.2	19.8	20.5	21.1	21.6
	130						15.1	16.1	17.0	17.9	18.7	19.5	20.3	21.1	21.9	22.7	23.4
	140								17.5	18.5	19.5	20.4	21.4	22.3	23.3	24.2	25.1
	150											21.2	22.4	23.5	24.6	25.7	26.8

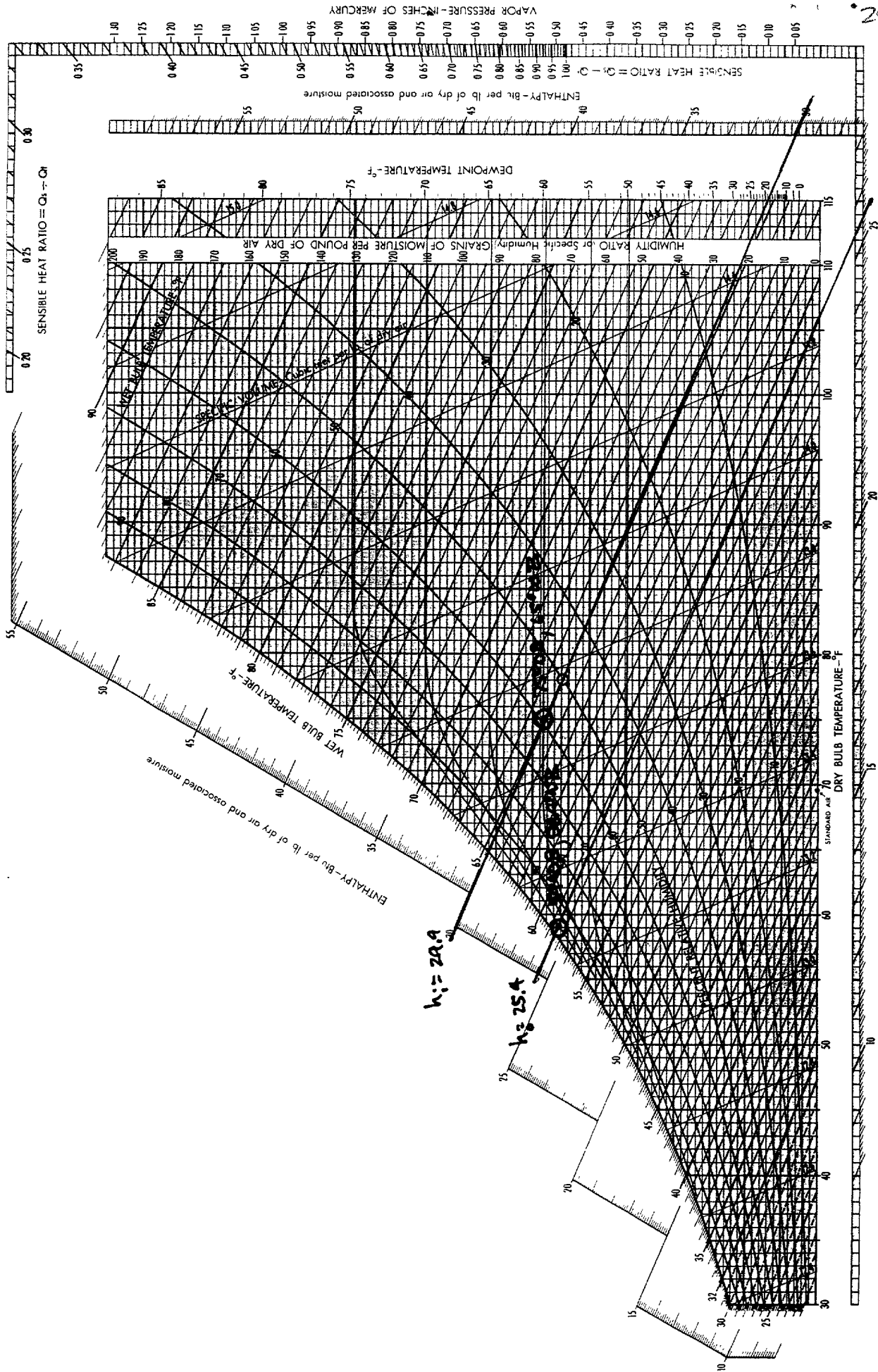
## MASS FLOW (LB/HR)

		EVAPORATING TEMPERATURE, deg F															
		-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
CONDENSING TEMPERATURE deg F	80	162.6	199.6	239.7	283.0	329.9	380.4	434.7	493.0	555.5	622.4	693.9	770.1	851.2	937.4		
	90	153.9	189.5	228.3	270.4	316.1	365.5	418.8	476.2	537.9	604.0	674.7	750.2	830.7	916.4		
	100	142.2	176.5	214.0	255.0	299.6	347.9	400.3	456.8	517.6	582.9	653.0	727.9	807.9	893.1	983.7	1080.0
	110		161.3	197.6	237.5	281.0	328.4	379.8	435.4	495.5	560.1	629.5	703.9	783.4	868.2	958.4	1054.4
	120				218.7	261.2	307.6	358.2	413.0	472.4	536.3	605.2	679.0	758.1	842.5	932.5	1028.2
	130						286.6	336.3	390.4	449.1	512.4	580.7	654.1	732.8	816.9	906.6	1002.2
	140								368.4	426.4	489.2	557.0	630.0	708.3	792.1	881.7	977.1
	150											534.9	607.5	685.5	769.1	858.5	953.8

FIG. 10

# PSYCHROMETRIC CHART

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Barometric Pressure 29.921 inches of Mercury



ENTHALPY - Btu per lb of dry air and associated moisture

FIG. 11

ET18223695845  
21522

## BLOWER PERFORMANCE DATA

### MODEL AH20

Blower Speed	S.C.F.M. at E.S.P.							
	.1	.2	.3	.4	.5	.6	.7	.8
High	2125	2100	2055	2020	1980	1930	1870	1820
Med. High	1730	1710	1695	1675	1655	1620	1600	1565
Low	1385	1375	1365	1360	1345	1280	1300	1280

Note: C.F.M. deliveries shown are with filter and coil in place.

FIG. 12

TD3030" 65642660

1990-1991		1991-1992		1992-1993		1993-1994		1994-1995		1995-1996		1996-1997		1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028		2028-2029		2029-2030		2030-2031		2031-2032		2032-2033		2033-2034		2034-2035		2035-2036		2036-2037		2037-2038		2038-2039		2039-2040		2040-2041		2041-2042		2042-2043		2043-2044		2044-2045		2045-2046		2046-2047		2047-2048		2048-2049		2049-2050		2050-2051		2051-2052		2052-2053		2053-2054		2054-2055		2055-2056		2056-2057		2057-2058		2058-2059		2059-2060		2060-2061		2061-2062		2062-2063		2063-2064		2064-2065		2065-2066		2066-2067		2067-2068		2068-2069		2069-2070		2070-2071		2071-2072		2072-2073		2073-2074		2074-2075		2075-2076		2076-2077		2077-2078		2078-2079		2079-2080		2080-2081		2081-2082		2082-2083		2083-2084		2084-2085		2085-2086		2086-2087		2087-2088		2088-2089		2089-2090		2090-2091		2091-2092		2092-2093		2093-2094		2094-2095		2095-2096		2096-2097		2097-2098		2098-2099		2099-2100		2100-2101		2101-2102		2102-2103		2103-2104		2104-2105		2105-2106		2106-2107		2107-2108		2108-2109		2109-2110		2110-2111		2111-2112		2112-2113		2113-2114		2114-2115		2115-2116		2116-2117		2117-2118		2118-2119		2119-2120		2120-2121		2121-2122		2122-2123		2123-2124		2124-2125		2125-2126		2126-2127		2127-2128		2128-2129		2129-2130		2130-2131		2131-2132		2132-2133		2133-2134		2134-2135		2135-2136		2136-2137		2137-2138		2138-2139		2139-2140		2140-2141		2141-2142		2142-2143		2143-2144		2144-2145		2145-2146		2146-2147		2147-2148		2148-2149		2149-2150		2150-2151		2151-2152		2152-2153		2153-2154		2154-2155		2155-2156		2156-2157		2157-2158		2158-2159		2159-2160		2160-2161		2161-2162		2162-2163		2163-2164		2164-2165		2165-2166		2166-2167		2167-2168		2168-2169		2169-2170		2170-2171		2171-2172		2172-2173		2173-2174		2174-2175		2175-2176		2176-2177		2177-2178		2178-2179		2179-2180		2180-2181		2181-2182		2182-2183		2183-2184		2184-2185		2185-2186		2186-2187		2187-2188		2188-2189		2189-2190		2190-2191		2191-2192		2192-2193		2193-2194		2194-2195		2195-2196		2196-2197		2197-2198		2198-2199		2199-2200		2200-2201		2201-2202		2202-2203		2203-2204		2204-2205		2205-2206		2206-2207		2207-2208		2208-2209		2209-2210		2210-2211		2211-2212		2212-2213		2213-2214		2214-2215		2215-2216		2216-2217	
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FIG. 13